CHISOLM (J. J.)

# A GLIOMA OF THE RIGHT EYE SPREADING BY METASTASIS THROUGH MANY PERIOSTEAL CENTRES

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# A GLIOMA OF THE RIGHT EYE SPREADING BY METASTASIS THROUGH MANY PERIOSTEAL CENTRES.

By JULIAN J. CHISOLM, M.D., of Baltimore, Md.

(*With an engraving.*)

CANCERS originating in and about the eye are unfortunately of frequent occurrence, and, therefore, are no longer reported. Now and then a case presents itself which deviates so far from the regular course which all such cases follow toward the fatal issue, as to be worthy of note. In this class is the case now reported,—one in which a glioma, originating in the right retina of a young child, is followed by successive outgrowths from centres of metastatic infection; periosteal nodes developing with great rapidity over the parietal, mastoid, lower maxillary, and clavicular regions, on opposite sides of the body to the eye in which the cancer first made its appearance. Hideous deformities are produced by these rapidly developing tumors, before death relieves the little patient.

W. J., a bright mulatto boy, two and a half years of age, was brought to me for a defect in the right eye. He was of delicate frame, but had never been seriously sick. The ever-watchful mother had conceived the idea that vision in the right eye was defective, and that the pupil had exhibited a glassy look, which was not natural to the child. To all appearances the eye was normal, except that the pupil was somewhat dilated, as if under the partial effects of a weak atropine solution. It did not contract under the influence of light. There was neither injection, discolor-

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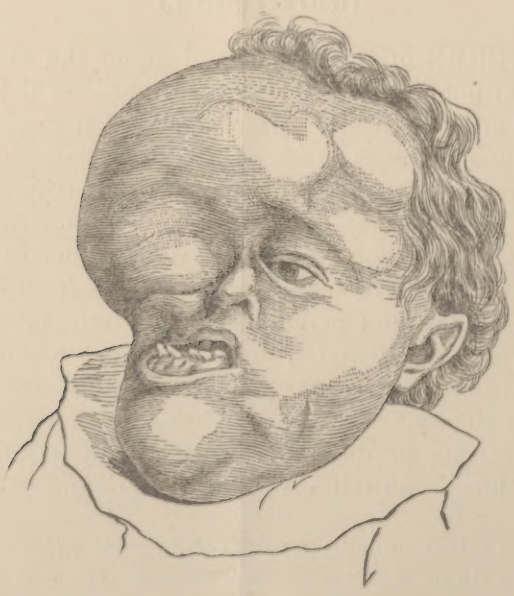
ation, nor weeping of this eye. Ophthalmoscopic examination showed a whitish yellow reflex in the fundus, which induced me to note the case as a suspicious one. As there were no symptoms calling for active treatment, the mother was instructed to bring the child back for further examination. I was soon convinced, after a very few visits, that I had the usual form of intra-ocular growth of childhood to deal with. As the eye was causing no trouble whatever, and the mother was expecting the eye to be restored, I did not urge immediate enucleation, especially as she was not prepared to make such a sacrifice. I explained to her the nature of the trouble, and concluded to await some expression of irritation in the eye, or evidence of suffering on the part of the child, before discussing with the mother the propriety of removing the eyeball.



Four months passed without the eye undergoing any visible change, the intra-ocular growth seemingly being in an undeveloping state. There was neither scleral injection, nor any other external vascular disturbance. The iris had undergone no discoloration ; the pupil remained partially dilated, but was not yet exhibiting the whitish reflex from the glioma except under oblique illumination. The eyeball was not displaced, nor were its move-

ments in the socket in any way hampered. This led me to believe that the small growth, which had not yet occupied the vitreous chamber, had not grown in the direction of the socket, nor involved the optic nerve.

The child had recently suffered much from the summer's heat, and was much enfeebled from cholera infantum. I advised its removal into the neighboring county, so as to escape the confinement of the city ; also that the child be brought in should any change occur.

At the end of a month I again saw the child, and recognized at once a slight prominence of the eyeball, with displacement downward and inward. There was also a fulness on the temporal side of the eyebrow, which was continuous with the socket. This recent swelling seemed adherent to the orbital rim and felt, as if it were a thickening of periosteum. The eyeball itself had undergone no change in appearance, and, while the slight strabismus was evident, the movements of the eye were not materially restrained. At this visit the mother called my attention to two small knots under the hair of the scalp : one, the most conspicuous, was over the left parietal protuberance ; the other, over the apex of the occipital bone. They were periosteal nodes, flattened, although well circumscribed mounds, the skin gliding freely over them. When handled, the child gave no evidence of pain. The mother was quite sure that they had appeared within the last week. The brow-thickening convinced me that enucleation now would be a useless operation, and, therefore, the course of the disease was to be simply one for clinical observation.

In two weeks the child was again seen. The displacement of the eye was much more marked by the development of the socket and brow-swellings, which had extended also externally to the temple. A third knot had made its appearance near the right frontal suture, two and a half inches above the orbital swelling. The growth over the left parietal bone had decidedly increased. The child's appetite was poor ; he had spent restless nights, and had evidently lost flesh since the last visit. I prescribed a ferrated tonic, and recommended the use of anodynes, gr. ii. of sulphate of morphia to aqua ℥ viij., a teaspoonful at bedtime.

In two weeks the child was again seen. There was a general increase in all the head lumps,—especially of the socket and temple-growth, with marked prominence of the still unchanged eyeball. The original tumor of the right socket, and that over the

frontal suture, were rapidly approaching each other. At this visit my attention was called to other small knots under the scalp, and especially to a broad, well-defined node on the outer face of the left inferior maxillary bone in front of the ramus. It resembled in every respect the previous developments, and was strictly periosteal. The flat lump was confined to the outer face of the bone, the skin being perfectly free over it. Since its discovery—even in a few days—it appeared to have exhibited excessive energy. The child's appetite had improved under the tonic, but his restlessness at night demanded several doses of the morphia solution to quiet him. The strength of the morphia was increased to gr. iii. to ℥ viii. of water, a teaspoonful when necessary. The hot weather was now over, and the child had been brought back to the city, so that I could see him more frequently.

As he was brought for inspection from week to week the development of the various growths was quite perceptible from visit to visit. The eyeball, not yet increased in size, had been pushed quite out of the socket. The tension effect of rapid protrusion had caused the cornea to yield, and a yellowish crust covered its surface. The jaw swelling had grown more rapidly than any other of the tumors. The left half of the inferior maxillary bone had increased generally in size, in length as well as circumference, so as to thrust the chin to the right side of the body. It appeared to have undergone a general infiltration from the malignant cell growth. The teeth were displaced in an irregular line but none of them were very loose. The skin, over all the largest swellings, had lost its normal yellow color, and from an admixture of red from the very vascular character of the subcutaneous growth had assumed a bronzed tint, with glistening appearance from the tension. Large dark vessels marbled the polished surface of both the jaw and temple swellings. Both of these tumors were so soft and elastic as to give, to a marked degree, the deceptive fluctuation of encephaloid cancer. An additional nodule had made its appearance over the left brow. It was separated for a considerable distance from the right brow tumor, which had spread rather toward the temple than encroached upon the median line. In spite of the large size of the socket growth the root of the nose was still sharply defined. At this time my attention was also called to a well-outlined swelling over the left clavicle, clearly a periosteal circumscribed thickening over the centre of the bone. With the growth of the tumors the body had steadily undergone emaciation.

This was the last visit of the child to my office. Besides its feeble condition, it had become too conspicuous an object to be carried through the streets. The head, of huge size, had become so weighty in its deformity that it could no longer be supported by the straw-like neck. The appetite was good, but the body was steadily dwindling away. The child was now taking a grain of morphia a day, and even this large quantity for a child three years of age did not furnish it with its quota of sleep. Mentally the child was very bright, much beyond the average, and continued so to the end, showing that at no time was there any cerebral complications.

Marasmus and final exhaustion brought the child relief on Nov. 5, 1883, twelve months from the date of the first examination, and six months from the first evidences of metastatic developments. At no time had there been any breaking of the skin over any of the tumors, nor had there been any bleeding from the eye growth. At the time of death the child's head must have weighed much more than the rest of the body. It was the head of a monster, attached to the skin-covered skeleton of a three-year-old child. The arms at the shoulder were not one inch in diameter and the thighs were only a trifle larger. An autopsy was not permitted, but there were no abdominal lumps to indicate developments in the viscera.

The striking peculiarity in this case was the metastatic growth, always periosteal, from the primary eye trouble. Once starting they so completely eclipsed the original trouble that the eye growth seemed to have come to a standstill. Long before the vitreous chamber became full of the primary growth, the secondary head tumors had attained a size coequal with the head itself. There seemed to have been no visceral complications, only periosteal invasion of the superficial bones of the head and finally of the clavicle.

A case of metastatic glioma, strikingly similar to the one just described, is reported by Dr. H. Knapp and C. S. Turnbull in the ARCHIVES OF OPHTHALMOLOGY, for 1874, vol. iv, No. 1. In this case he was fortunate enough to have secured the specimen for autopsy and microscopic examination. He found no abdominal nor thoracic complications. In his case periosteal outgrowths were developed on various

parts of the head including also the lower jaw. In all the tumors the well-known microscopic appearances of glioma or encephaloid cancer were found, showing a common character to both the eye and head tumors, and fixing the metastatic nature of the glioma. Such frightful cases occur, fortunately, very seldom, and only five or six of a similar nature are on record. The first is described by Dr. H. Knapp in his "Intraocular Tumors," 1868 (Wm. Wood & Co.), with full details and numerous drawings of the ophthalmoscopic appearance, and the ante-mortem and post-mortem, macroscopic and microscopic conditions of this disease.

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